EFV
Firepower Briefing

NDIA
13-16 APRIL 04

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Demonstrated to Date

- Mk-44 WSERB: Qualified Aug 0

- MK-44 Interoperability with Common Ammo (30X173mm): (Amm
  - APFSDS-T (Armor Piercing, Fin-Stabilized, Discarding Sabot -Tracer)
    -MK258
    -MK268
  - HEI-T (High Explosive Incendiary-Tracer)
    - MK238
    - MK266 (3 types)
  - TP-T (Training Practice - Tracer)
    - MK239 (2 types)
    - MK270
  - TP (Training Practice)
    - MK271
    - PGU-15/B
  - MP (Multi-Purpose)
    - MK264 (2 types)
    - EX267
  - APDS (Armor Piercing, Discarding Sabot)
    - MN30

te. $40 Million spent to date in qualifying the MK44 and aforementioned am

30mm High Explosive

Lethality Testing

Hawthorne,
Nevada

15 Oct – 04 Nov
2003

Terminal Lethality:

- MK240 SAPHEI-T
- MK264 MPLD-T
- MK266 Mod1 HEI-T

Threshold Range: 1500 meters

Objective Range: 2000 meters

Targets for High Explosive:

- Infantry: Standing, Prone, 600-1000m, 1500m, 2000m, 3600m
- Lightly Armored Vehicles: BTR-60, M113
- Unarmored Vehicles: M900 series trucks
- Lightly Fortified Infantry Emplacements
- Evaluation against Infantry Fighting Vehicles (BMP-1)

Lightly Armored Vehicles

- Independent Loss of Function Analysis conducted by Marine Corps Operational Test and Evaluation Agency (MCOTEA)
- MK240 and MK264 highly effective against BTR-60, 1500m.
- MK240 more effective as range increases.
- MK240 more effective against M113 (Al), 1500m
- Both capable of perforating engine deck lid of BMP-1, MK240 can perforate flank at 1500m.

MK264 MPLD-T BTR-60
1500m

MK240 SAPHEI-T BTR-60
1500m

MK264 MPLD-T M113
1500m

MK240 SAPHEI-T M113
1500m

MK240 M113

MK264 M113

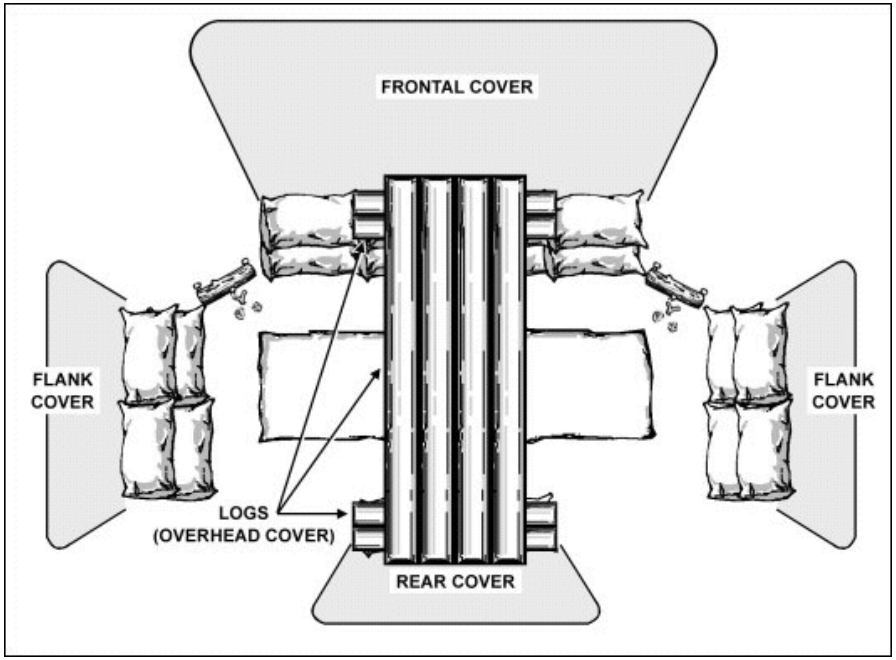
Unarmored Vehicles

- 900 Series Trucks, 1500 meters, frontal aspect
- All three rounds effective at achieving LoF
- MK240 and MK264 capable of internal engine compartment damage.
- MK240 started and sustained two fires.

MK240, MK264, MK266 900 series Trucks

Lightly Fortified Infantry Emplacement

- 600 and 1000 meters
- MK240 and MK264 effective at perforating frontal protection in approximately ten rounds.



Standing Infantry

- ORD target is Standing 8-man squad deployed in 10 meter deep by 50 meter wide area

- Tested at 600-1000m, 1500m, 2000m, 3600m

- Lethality modeled in JMEM, ComputerMan, and ORCA.

- Compared to previous DRPM tests.

- Prone mannequins also included, modeling has not been completed.

Standing Infantry

- 1500-2000 meters: MK240 best overall
  - MK266 slightly better against ORD squad.
  - Given round function (no ricochet) MK264 most lethal.
- No significant changes to results at 3600m.
- MK266 most effective at close ranges, MK240 and MK264 hurt by delay.

Standing Infantry

SUMMARY

MK240 SAPHEI-T

most effective round against the

EFV High Explosive Target Matrix

Target Set

Infantry

Lt. Fort. Pos/ Material

Unarm Veh/ Watercraft

Lt Armored Vehicles

IFV/BMP

Interim EFV Ammo Plan

Infantry

Lt. Fort. Pos/ Material

Unarm Veh/ Watercraft

Lt Armored Vehicles

IFV/BMP

HE

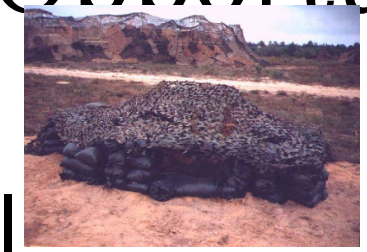
MPLD

APFSDS

Future Ammo Opportunity

Future Ammo Opportunities

Infantry

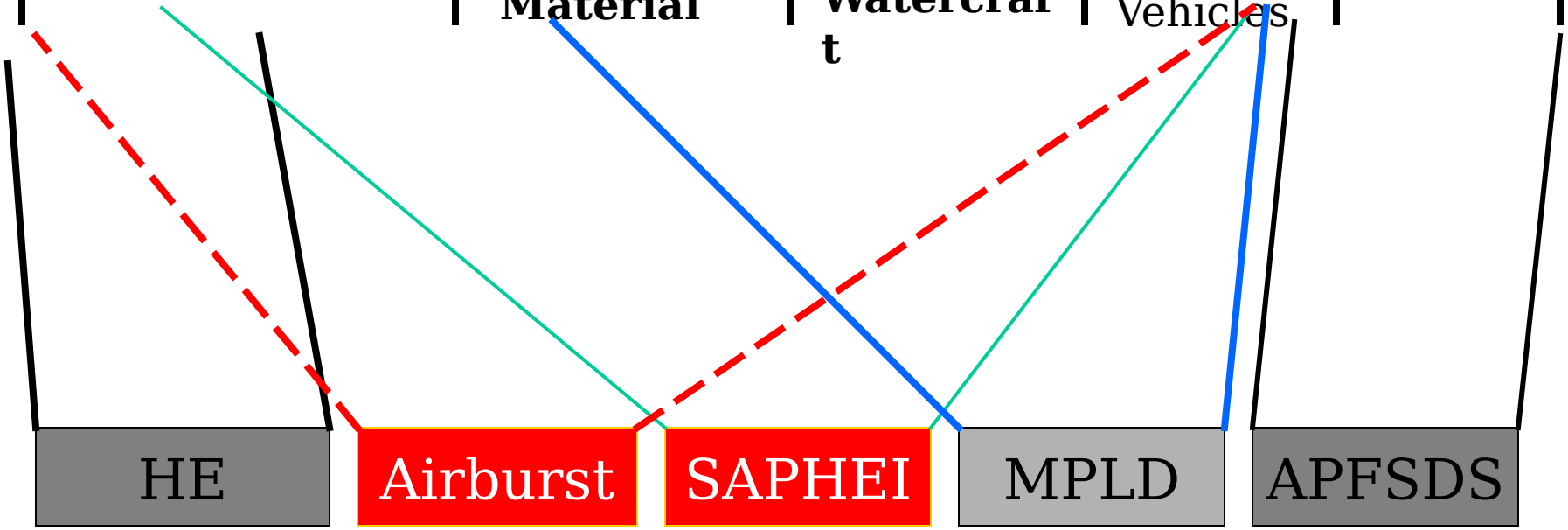


Lt. Fort. Pos/ Material

Unarm Veh/ Watercraft

Lt Armored Vehicles

IFV/BMP



Air Burst Operational Benefit

- Significant increase in lethality against primary target (Infantry)
- Programmable fuse allows A/B round to be effective against greater target set
- Multi-service compatibility
- Allows greater pursuit of EFV/MK 46 to be employed as an Indirect Fire platform in the future.
- Eliminates need to link MP/HEI-T 1 to 1 (Less ammo req.)

SAPHEI-T Cost Assumptions

- Too Expensive as of today: 80% of PANMC budget required to purchase War Shot over Life Cycle.
- Very little interest by other services at this time
- $2 Million (+ -) needed to complete qualification

Air Burst Cost Assumptions

- Cost per round unavailable at this time
- Multi-service interest: US Navy, US Army, and US Coast Guard.
- Foreign Comparison Test (FCT) funds could be pursued to lower costs to program
- Domestic vendors and qualification costs could be shared across services.
- Opportunity exists to share system integration costs with US Navy.

Exploration of MK44 Options

MK44

- ATK Reduced Weight/Increased Recoil Initiative
- Significant weight reduction: Good for EFV
- Increased Recoil gives USMC greater Super 40 capability in the future.
- Looks very promising at this time.